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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/056,343	04/07/98	LOEVBOURG	U 3556.224-US

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CAROL E ROZEK
NOVO NORDISK OF NORTH AMERICA INC
SUITE 6400
405 LEXINGTON AVENUE
NEW YORK NY 10174-6401

EXAMINER

MOORE, W

ART UNIT

PAPER NUMBER

1652

15

DATE MAILED: 05/01/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/056,343

Applicant(s)

LOEBORG, UFFE

Examiner

William W. Moore

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1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 27 February 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 40-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 40-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Response to Amendment

Applicant's Amendment B, Paper No. 14 filed February 27, 2001, has been entered and claims 24-39 were canceled at Applicant's request. Newly submitted claims 40-47
5 avoid the rejections of record over the prior art of record as well as the rejections of record under the first and second paragraphs of 35 U.S.C. § 112 stated in Paper No. 12 mailed August 22, 2000, but raise new issues under the second paragraph of the statute.

Lack of an Abstract

While the submission of an abstract was requested at page 2 of Paper No. 8 mailed
10 April 26, 1999, this application still does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine
15 grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418
20 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting
25 ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b). Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 40-47 are for reasons or record rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent
30 No. 5,766,898. Although the conflicting claims are not identical, they are not patentably distinct from each other because the methods of producing a modified subtilisin having reduced immunogenicity of the issued patent are methods which may be practiced according to, and are not excluded by, methods described by claim 40-47 of the pending application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5 Claims 40-47 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10 This rejection is made under the second paragraph of the statute, rather than the first paragraph of the statute for lack of an adequate written description because the absence of a description of a complete method in the new claim 40 appears to be inadvertent.

15 Clause (a) of claim 40 recites "epitopes of **the** parent protein" without any previous recitation of a parent protein. This is indefinite because it fails to distinctly claim that which Applicant appears to have intended the claim describe: a generic method wherein a reference or parent protein is modified, resulting in a variant protein. Use of the indefinite article is required to overcome this aspect of the rejection. Clause (a) of claim 40 further recites "using immunological and proteochemical methods", which recitation is set off by a comma from the rest of the clause. This portion of clause (a) describes an unspecified activity conducted "on the complete parent protein" thus, even if it were recited as a separate clause, would fail to recite the object of the use of the methods and would remain
20 indefinite. Applicant actually intends that "immunological and proteochemical methods" be used not only to map one or more epitopes in a parent protein and also - see page 6, lines 15-17, of the specification - but to determine whether a recombinantly produced protein variant actually has a **reduced** immunogenicity. This is because the specification does not teach the artisan how to reduce the immunogenicity of mapped epitope regions
25 *ab initio*, but teaches a method that includes the generation of variants and a subsequent selection of those variants with reduced immunogenicity. Claim 1 is therefore indefinite in reciting an incomplete description of Applicant's intended method.

Another instance of incomplete description of an intended method is the lack of a transitional or linking clause relating events described in clauses (c) and (d) of claim 40: no host cell is transformed or transfected with the vector of clause (c). In addition to the ambiguous and incomplete descriptions, clause (b) of the claim recites three words, at line
5 six of the claim, that are inexplicably underlined: "in an animal". The use of underlining in claims presented in U.S. patent applications is limited to amendatory insertions of text but claim 40 is not an amended claim. Immune responses have not been demonstrated to occur in organisms not animals, thus the phrase underlined could not be considered to be a distinguishing characteristic that might be introduced by amendment.

10 It is suggested that Applicant might more clearly and accurately describe the method that the specification actually discloses thus:

"A method for producing a variant of a reference protein having a known amino acid sequence whereby the variant protein evokes a lower immunogenic response in an animal than the reference protein, the method comprising:

15 (a) mapping one or more epitopes of a reference protein with immunological and proteochemical techniques,

(b) modifying the amino acid sequence of said reference protein in the region of one or more of said mapped epitope(s) to provide a variant protein either by mutating a DNA molecule encoding the amino acid sequence of the reference
20 protein to alter the amino acid sequence of one or more epitopes or by synthesizing a DNA molecule encoding the reference protein having an altered amino acid sequence of one or more epitopes,

(c) inserting the DNA molecule encoding said variant protein into a vector suitable for transforming a host cell,

25 (d) transforming or transfecting a host cell with said vector and cultivating the host cell under conditions suitable for expressing a variant protein, and,

(e) recovering a variant protein, and,

(f) mapping one or more epitopes of a recovered variant protein with immunological and proteochemical techniques to select those amino acid sequence

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alterations of one or more epitopes of the reference protein that reduce or eliminate immunogenicity of said one or more epitopes."


While this proposed recitation above does not appear *in haec verbis* at pages 4-6 of the specification, it does use terms that occur in the specification and sets forth a complete set of process steps that permit production of a variant with the necessary characteristics.

Claims 41-47 are included in this rejection because they depend from claim 40, thus incorporate its ambiguous or indefinite recitations, but do not correct the above-indicated deficiencies of the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William W. Moore whose telephone number is 703.308.0583. The examiner can normally be reached from 8:00AM-6:30PM EST on Mondays, Wednesdays, and Fridays and from 11:30AM-6:00PM EST on Tuesdays and Thursdays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy can be reached at 703.308.3804. The fax phone numbers for the organization where this application or proceeding is assigned are 703.308.4242 for regular communications and 703.308.0294 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0196.

William W. Moore
April 25, 2001


PONNATHAPU ACHUTAMURTHY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600